



Our ref: KON-1692

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of: E. KATOH :  
Serial No. : 10/015,978 : Group : 1774  
Filed : December 10, 2001 : Examiner: B. Shewareged  
Title : INK JET RECORDING : Dated :  
SHEET  
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DECLARATION

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

S i r:

I, Yoshinori Tsubaki, hereby declare and say as follows:

1. I make this Declaration, to complement my prior Declaration dated May 13, 2003.
2. I am aware that the Examiner has rejected the claims of this Application based on US 6,521,323

to Sakaki and EP 1 034 940 to Ohbayashi. Tests have been performed and are reported herein in order to demonstrate that a superior ink jet recording sheet is produced when the surface pH of the ink absorptive layer is 4 to 6 measured 30 minutes after receiving a water based ink having a pH range 6 to 9 jetted in an amount of 20 ml/m<sup>2</sup>. These tests have been performed either by myself or under my direct supervision and control.

3. Two different ink jet recording sheets were prepared in accordance with Sakaki. The first recording sheet was prepared in accordance with Example 1 of Sakaki. The second recording sheet was prepared in accordance with Example 53 of Sakaki.
4. The water-extracted pH value of Example 1 of Sakaki was measured according to the measurement method of Sakaki. The recording sheet of Example 1 of Sakaki had a water-extracted pH value of 6.8. A cyan ink having a pH value of ~~6.2~~ <sup>6.5</sup> Y.T. (described on page 55 of the Application) was <sup>1/21/2004</sup>

jettied onto the recording sheet of Example 1 of Sakaki. The surface pH value was measured according to the measuring method of the present invention. The surface pH value of the recording sheet of Example 1 of Sakaki was 6.5. This surface pH value is outside the claimed range of the present invention.

5. A cyan ink having a pH value of <sup>6.5 Y.I. 1/21/2004</sup>~~6.2~~ (described on page 55 of the Application) was jettied onto the recording sheet of Example 53 of Sakaki. The surface pH value was measured according to the measuring method of the present invention. The surface pH value of the recording sheet of Example 53 of Sakaki was 6.6. This surface pH value is also outside the claimed range of the present invention. In addition, it is noted that the composition of the recording sheet of Example 53 of Sakaki is considered to be very similar to the recording sheets of the present invention, since the recording sheet of Example 53 of Sakaki contains an inorganic salt (basic polyaluminum chloride).

6. The recording sheets of Example 1 and Example 53 of Sakaki were also evaluated for bleeding, bronzing and ambient humidity dependence after being jetted with the cyan ink having a pH ~~6.2~~<sup>6.5</sup>. Y.T. 1/21/2004  
The results of these evaluations are illustrated in Table 1.

Table 1

Recording sheet	Bleeding	Bronzing	Ambient Humidity Dependence
Example 1 of Sakaki	2.01	none	3.2
Example 53 of Sakaki	1.32	none	18.6

7. Table 1 demonstrates that the recording sheet of Example 1 of Sakaki was inferior to the recording sheet of Example 53 of Sakaki in terms of bleeding. In my opinion, the recording sheet of Example 53 of Sakaki exhibited a superior bleeding property due to the incorporation of basic polyaluminum chloride. Nevertheless, in my opinion, the high surface pH (6.6) of the

recording sheet of Example 53 of Sakaki caused high ambient humidity dependence. Thus, the recording sheet of Example 1 of Sakaki and the recording sheet of Example 53 of Sakaki were inferior to the ink jet recording sheets of the present invention.

8. Specifically, it should be noted that the recording sheets of the present invention, as reported in Tables 1-5 on pages 54, 61, 63, 66 and 68 of the Application, have a combination of low bleeding, no bronzing and low ambient humidity dependence. The recording sheets of the present invention are superior to the recording sheet of Example 1 of Sakaki and the recording sheet of Example 53 of Sakaki as reported herein.
9. These tests demonstrate the criticality of the surface pH of the ink absorptive layer. In other words, a superior ink jet recording sheet is produced when a surface pH of the ink absorptive layer is 4 to 6 measured 30 minutes after receiving a water based ink of pH range 6 to 9

jetted in an amount of 20 ml/m<sup>2</sup>. The superior effects of the present invention in terms of bleeding, bronzing and ambient humidity dependence are further demonstrated in Table 1-5 of the Application.

10. I believe that these tests demonstrate the surprising and unexpected effects of the present invention and that a superior ink jet recording sheet is produced compared to the ink jet recording sheets of Sakaki and Ohbayashi.

It is declared by undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under section 18 U.S. Code 1001, and that such willful false statements may jeopardize the validity of this Application or any patent issuing thereon.

Yoshinori Tsubaki  
Yoshinori Tsubaki

Dated: This 21st day of January, 2004.